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ABSTRACT

The aim of this bibliography is to provide a reference on the cloze procedure for the practitioner and the researcher. The selection of material was done on the basis of (1) the importance of the source as a contribution to cloze research, (2) the extent and the usefulness of the source's bibliography as a guide to related research, (3) the implications for practitioners, (4) the suggested possibilities for future research using the cloze procedure, and (5) the ease with which the original source could be obtained. The sources used in the bibliography have been arranged into four categories: general references, methodology of cloze construction, use of cloze as a measure of readability, and use of cloze as a teaching strategy. No attempt has been made to include every available article dealing with the cloze procedure, but the author hoped the reference would be inclusive enough to provide sufficient information for an extensive review of a particular area. (Author/WR)

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AN INTRODUCTION TO THE CLOZE PROCEDURE

An Annotated Bibliography

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1972

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INTRODUCTION

The first published paper on the cloze procedure was done by Wilson Taylor in 1953. This article proved to be only the inception of interest in various aspects of cloze. Since then, a considerable amount of research on this technique has been undertaken.

The cloze procedure can be defined as a method of systematically deleting words from a prose selection and then evaluating the success a reader has in accurately supplying the words deleted. Various methods of deletion and scoring have been developed.

Early research centered on the methodology of cloze construction. Investigations concerned with deletion techniques, scoring methods, and test lengths were most common during this period. Closely related to these studies were those dealing with the reliability and the validity of the cloze procedure. Populations of varying sizes, age ranges, and educational levels were also in evidence.

As information from previous work became available, other investigators turned to cloze as a possible means of measuring comprehension and readability. Increased attention was also focused on implications for classroom teachers and the possible use of cloze as an instructional technique.

The aim of this bibliography is to provide a reference on the cloze procedure which will be useful to both the practitioner and the researcher. The selection of material was done on the basis of the following criteria: 1) the importance of the source as a contribution to cloze research, 2) the extent and the usefulness of the source's bibliography as a guide to related research, 3) the implications for practitioners, 4) the suggested possibilities for future research using the cloze procedure, and 5) the ease with which the original source could be obtained.

The sources used in this bibliography have been arranged into four categories: general references, methodology of cloze construction, use of cloze as a measure of readability, and use of cloze as a teaching strategy. In several instances this was an arbitrary decision, as the contents of a specific article were broad enough to fit into more than one category.

In recent years an increasing number of doctoral dissertations concerned with the cloze procedure have been completed. Several of these are listed in this bibliography and are available from University Microfilms.

No attempt was made to include every available article dealing with the cloze procedure. It was hoped that the bibliographies included in this reference would be inclusive enough to provide sufficient information for those desiring an extensive review of a particular area.

RDR

GENERAL REFERENCES

This section of the bibliography contains material which will enable the reader to get an overview of the cloze procedure and its development. Reviews of research by Bickley, Potter, Rankin, and Weintraub are included. These studies, considered as a group, cover the majority of materials published concerned with the cloze technique. Wilson Taylor's original article is listed here, even though it could easily have been placed in several other categories. This was done in recognition of its effect and influence on later work.

BICKLEY, A.C., BILLIE J. ELLINGTON, and RACHEL T. BICKLEY. "The Cloze Procedure: A Conspectus," *Journal of Reading Behavior,* 2 (Summer 1970), 232-249.

Reviews 105 studies concerned with the following aspects of cloze: readability, comprehension, language, and methodology. Contains references to most of the significant cloze research. Accompanying text provides a well organized summary of this area.

GREENE, FRANK P. "Cloze Symposium," in George B. Schick and Merrill M. May (Eds.), *Multidisciplinary Aspects of College – Adult Reading,* Seventeenth Yearbook of the National Reading Conference. Milwaukee: National Reading Conference, 1968, 110-131.

Reports the presentations of five speakers dealing with various aspects of the cloze procedure. Problems of cloze construction, scoring, and its use as a teaching instrument are discussed. Areas of future research are considered.

HAFNER, LAWRENCE E. "Cloze Procedure," *Journal of Reading,* 10 (May 1966), 415-421.

Describes various applications of cloze with particular attention to the research on cognitive abilities, personality variables, and diagnoses in reading. Notes the lack of references dealing with cloze as a teaching tool.

POTTER, THOMAS C. *Reading Skills in Young Children: Closure and Comprehension,* doctoral dissertation, University of California at Los Angeles. Ann Arbor, Michigan: University Microfilms, No. 68-14, 1968, 556.

Identifies 81 cloze studies and lists them in a series of 20 tables containing the following information on each reference: author, date of study, subjects, cloze test description, other tests, research design, and findings. An especially useful presentation because of this organizational pattern.

RANKIN, EARL F. "Cloze Procedure – A Survey of Research," in Eric S. Thurston and Lawrence E. Hafner (Eds.), *The Philosophical and Sociological Bases of Reading,* Fourteenth Yearbook of the National Reading Conference. Milwaukee: National Reading Conference, 1965, 133-150.

Surveys the cloze research completed to this date. References in this extremely complete listing are covered under three general headings: the cloze procedure as a measuring instrument, the cloze procedure as a teaching device, and methodological considerations. This compilation of 47 studies should be a useful source of information on earlier cloze research.

TAYLOR, WILSON S. "Cloze Procedure: A New Tool For Measuring Readability," *Journalism Quarterly*, 30 (Fall 1953), 415-433.

Introduces the term "cloze procedure," defining it and suggesting various applications of this technique. Reports the results of several exploratory studies concerned with the construction of cloze passages and the use of cloze as a measurement of readability level. Important reference because of its influence on the research which followed.

TAYLOR, WILSON S. "Recent Developments in the Use of the Cloze Procedure," *Journalism Quarterly*, 33 (Winter 1956), 42-48, 99.

Examines in detail several of the early cloze studies. An especially useful presentation on the construction of cloze passages.

WEAVER, WENDELL. "Theoretical Aspects of the Cloze Procedure," in Eric S. Thurston and Lawrence E. Hafner (Eds.), *The Philosophical and Sociological Bases of Reading*, Fourteenth Yearbook of the National Reading Council. Milwaukee: National Reading Conference, 1965, 115-132.

Emphasizes the potential role of the cloze procedure in the study of language behavior and thought. Weaver criticizes the gestaltist view of cloze. He suggests cloze is a type of language search process rather than the mere completion of a perceptual task. A very extensive bibliography is included.

WEINTRAUB, SAMUEL. "The Cloze Procedure," *Reading Teacher*, 21 (March 1968), 567-571, 607.

Covers two segments of cloze research: the measurement of readability, and comprehension.

METHODOLOGY OF CLOZE CONSTRUCTION

Numerous studies have dealt with the construction and the scoring of cloze tests. Various deletion rates have been reported. These range from carefully preselected words to a purely mechanical method of removing every fifth, tenth, or twentieth word. One of the most common systems has been the one in five mechanical deletion pattern.

Two methods of cloze scoring have been reported in the literature. Exact scoring is the giving of credit only when the cloze response is the same as the original text. Synonym scoring allows words of the same meaning to be scored as correct.

BORMUTH, JOHN R. "Experimental Applications of Cloze Tests," in J. Allen Figurel (Ed.), *Improvement of Reading Through Classroom Practice*, Proceedings, 9. Newark, Delaware: International Reading Association, 1964, 303-306.

Investigates whether five different forms of a cloze test, constructed from the same prose passage, differ in difficulty. The number of cloze deletions was also considered in determining test level. Results indicated significant differences in mean scores of individual tests. An increase in cloze deletions tended to diminish these differences. The author suggests that when single forms of a cloze test are used, evaluation of the results must take into account possible error due to test selection. Introduces statistical procedures for determining whether test forms were drawn from passages of equal difficulty.

BORMUTH, JOHN R. "Optimum Sample Size and Cloze Test Length in Readability Measurement," *Journal of Educational Measurement*, 2 (June 1965), 111-116.

Presents data enabling cloze investigators to make useful estimates in determining sample size and test length. This article should prove useful to persons designing cloze research.

BORMUTH, JOHN R. "Validities of Grammatical and Semantic Classifications of Cloze Test Scores," in J. Allen Figurel (Ed.), *Reading and Inquiry*, Proceedings, 10. Newark, Delaware: International Reading Association, 1965, 283-286.

Reports the results obtained from the administration of a series of cloze tests to 50 sixth and seventh graders. Individual cloze responses were classified according to one of seven types. Statistical analysis showed that exact scoring seemed to yield the most valid results in the measurement of individual differences in reading ability and in the discrimination of passage difficulty.

GREENE, FRANK P. "Modification of the Cloze Procedure and Changes in Reading Test Performance," *Journal of Educational Measurement*, 2 (December 1965), 213-217.

Compares a standard mechanical deletion technique to a noun-verb-adverb-adjective deletion pattern, with these words subjectively selected as likely to be predicted by a better reader. Results showed that the modified test was superior to the mechanical method in reliability and item performance. Concludes that this increased reliability may be enough reason to use a modified cloze deletion system.

HAFNER, LAWRENCE E. "Implications of the Cloze," in Eric L. Thurston and Lawrence E. Hafner (Eds.), *The Philosophical and Sociological Bases of Reading*, Fourteenth Yearbook of the National Reading Conference. Milwaukee: National Reading Conference, 1965, 151-158.

Generates alternative patterns of cloze construction with suggestions for their use in the measurement of creativity, intelligence, concept development, and dynamics of thinking. An innovative article containing observations and suggestions for future cloze research.

MACGINITIE, WALTER H. "Contextual Constraint in English Prose Paragraphs," *Journal of Psychology*, 51 (January 1961), 121-130.

Classifies various patterns of cloze deletion including omissions of both single words and groups of words. Results indicate that deletions ranging from every sixth word through every twenty-fourth word were almost equally restorable. When omissions were every third word or less, the replacement task became much more difficult. Words deleted in groups of two, three, and four were more difficult to restore than single omissions. Concludes that the influence of context on the selection of a particular cloze response is highly related to the number of words between deletions. The removal of every fifth word seems to be the best pattern.

ROBINSON, RICHARD D. "An Investigation Into the Use of the Cloze Procedure With A Group of Functionally Illiterate Adults," doctoral dissertation, University of Georgia. Ann Arbor, Michigan: University Microfilms, 1971.

Describes the use of the cloze procedure with a group of functionally illiterate adults. Three types of cloze deletion were evaluated as predictors of a standardized reading test. The effectiveness of cloze in the measurement of reading difficulty was compared to several readability formulas. Results indicated that, for this population, a mechanical one-in-five deletion pattern was the best predictor and that cloze seemed to evaluate the prose passages in a more realistic manner.

TAYLOR, WILSON S. "Cloze Procedure: A New Test For Measuring Readability," *Journalism Quarterly*, 30 (Fall 1953), 415-433.

TAYLOR, WILSON S. "Recent Developments In the Use of the Cloze Procedure," *Journalism Quarterly*, 33 (Winter 1956), 42-48, 99.

Discusses many of the problems encountered in cloze construction. These two references are especially helpful as an introduction to cloze methodology. (See additional reviews of these articles listed under General References.)

USE OF CLOZE AS A MEASURE OF READABILITY

The accurate assessment of difficulty levels in reading materials has long been a problem in education. Traditionally, formulas have been used to measure readability levels, and comprehension has been tested by either multiple-choice or essay questions. Each method has inherent problems which frequently give false or misleading results. The cloze procedure has been suggested as a viable alternative in these situations. The studies listed in this section reflect the interest researchers have had in these problems.

BEARD, JACOB G. "Comprehensibility of High School Textbooks: Association With Content Area," *Journal of Reading,* 11 (December 1967), 229-234.

Analyzes the readability level of ten prose passages taken at random from high school textbooks in each of four content areas. These included biology, chemistry, American government, and world history. Each paragraph was evaluated using the cloze procedure and ten elements of expressional style often found in readability formulas. In addition, each passage was analyzed according to the number of words per *T* unit. A *T* unit can be defined as the shortest unit in a sentence which can be terminated with a capital letter and a period. Statistical procedures showed insignificant differences between readability levels in the four content areas on all readability measures except two of the elements of expressional style.

BORMUTH, JOHN R. "Cloze as a Measure of Readability," in J. Allen Figurel (Ed.), *Reading as an Intellectual Activity,* Proceedings of the International Reading Association, 8. New York: Scholastic Magazines, 1963, 131-134.

Investigates the use of cloze as a measure of the comprehension difficulties of the passages from which they are constructed. A cloze test and a multiple-choice comprehension test were developed for each of nine passages taken from the fields of literature, social studies, and science. Correlations between the two tests were highly significant.

BORMUTH, JOHN R. "Comparable Cloze and Multiple-Choice Comprehension Test Scores," *Journal of Reading,* 10 (February 1967), 291-299.

Provides table of equivalent cloze and multiple-choice test scores. This information can be used to evaluate a particular cloze score in relation to what the subject most likely would have received on a multiple-choice test covering the same material.

BORMUTH, JOHN R. "Cloze Test Readability: Criterion Reference Scores," *Journal of Educational Measurement,* 5 (Fall 1968), 189-196.

Establishes a set of cloze test scores comparable to instructional and independent level criterion scores on oral reading tests. Classroom teachers can use these results as a frame of reference for evaluating cloze results.

CULHANE, JOSEPH. "Cloze Procedures and Comprehension," *Reading Teacher,* 23 (February 1970), 410-413, 464.

Considers the construction and use of cloze as a measure of comprehension in the classroom. This reference provides examples of cloze construction and suggestions for teachers. Good introduction for those interested in a brief overview of the area.

GALLANT, RUTH. "Use of Cloze Tests as a Measure of Readability in the Primary Grades," in J. Allen Figurel (Ed.), *Reading and Inquiry,* Proceedings, 10. Newark, Delaware: International Reading Association, 1965, 286-287.

Examines two problems related to the use of cloze at the primary level: 1) the validity and reliability of this technique as a test of reading comprehension, and 2) the influence of increased sentence length on the reading difficulty of material for these grades. The findings indicated that cloze could be used in the primary grades as a measure of comprehension. It was also effective in isolating variables which affect readability.

KINGSTON, ALBERT J., and WENDELL W. WEAVER. "Recent Developments in Readability Appraisal," *Journal of Reading,* 11 (October 1967), 44-47.

Discusses the strengths and weaknesses of several research studies in readability. An extensive bibliography is included which should prove helpful to those interested in similar research efforts.

KLARE, GEORGE R. *The Measurement of Readability.* Ames, Iowa: Iowa State University Press, 1963.

Traces the development of readability assessment from its inception. A valuable reference because of its organization and completeness. It includes several charts which briefly summarize the essential steps in the application of most readability formulas. This book is a primary source for those who want to review the pertinent research in readability. The extensive, annotated bibliography is particularly useful.

MILLER, G.R., and E.B. COLEMAN. "A Set of 36 Prose Passages Calibrated for Complexity," *Journal of Verbal Learning and Verbal Behavior,* 6 (December 1967), 851-854.

Classifies 36 prose passages according to complexity using the cloze procedure. These selections ranged in difficulty from first grade through advanced technical writing. Three different types of cloze were used in this study. They included the following: deletion of every fifth word, deletion of one word in each sentence, and a pattern in which the subject proceeds through a passage trying to guess each of the words.

RANKIN, EARL F., and JOSEPH CULHANE. "Comparable Cloze and Multiple-Choice Comprehension Test Scores," *Journal of Reading,* 13 (December 1969), 193-198.

Replicates the earlier work of Bormuth in 1967 and 1968 (these studies reviewed in this section), in the establishment of equivalent cloze and multiple-choice percentage scores. Results of this study corroborate most closely with Bormuth, 1968.

TUINMAN, J. JAAP. "The Removal of Information Procedure (RIP) A First Analysis," *Journal of Reading Behavior,* 3 (Spring 1970-1971), 44-50.

Introduces the RIP (removal of information procedure) which is a reverse cloze technique. Instead of replacing deleted words, subjects are asked to identify for deletion those words which would be most difficult for someone else to guess again. The RIP is based on the assumption that language users can recognize high information words. The purpose of this exploratory study was twofold: to determine whether the RIP would be executed reliably and effectively and to establish the relationship of other measures of language performance to this technique. Results taken from a series of cloze tests and other measures indicated the potential usefulness of this procedure.

USE OF CLOZE AS A TEACHING STRATEGY

The cloze procedure has frequently been suggested as a teaching aid. Unfortunately, only a limited amount of research is available. Much of this work can be described as only exploratory in nature. Many questions about the appropriateness of cloze as a teaching technique remain unanswered.

Several of the studies listed in this section contain suggestions for the possible implementation of cloze in the classroom or clinic. These could be the basis of future research projects.

BLOOMER, RICHARD H. "The Cloze Procedure as a Remedial Reading Exercise," *Journal of Developmental Reading,* 5 (Spring 1962), 173-181.

Describes one of the first attempts to use cloze in the classroom. A series of graded cloze exercises were used to improve reading comprehension in a group of college students. Analysis of the results tended to show that these subjects increased significantly in comprehension and total reading ability. Direct teacher participation was limited to clerical duties. This study shows some of the inherent problems associated with cloze research in the classroom.

BORMUTH, JOHN R. "The Cloze Readability Procedure," *Elementary English,* 45 (April 1968), 429-436.

Recommends the use of cloze as a potentially valuable technique for classroom teachers. Following a brief overview of cloze research, the author explains various applications of this procedure for classroom use. Suggestions include the use of cloze as a technique for placing students in graded materials, selecting appropriate instructional texts, and comparing alternative materials. Teachers who would like to incorporate cloze in their instruction activities will find this reference very helpful.

GIUCE, BILLY M. "The Use of the Cloze Procedure for Improving Reading Comprehension of College Students," *Journal of Reading Behavior,* 1 (Summer 1969), 81-92.

Reports the results of an investigation to determine the influence of comprehension and cloze instruction on a group of college students as compared with a group who received only comprehension training. Statistical analysis showed the experimental group did not improve significantly more than the control group. These results were interpreted as being the reflection of limitations in the experimental design.

JONGSMA, EUGENE. *The Cloze Procedure as a Teaching Technique.* Newark, Delaware: International Reading Association, 1971.

Summarizes the research related to cloze as a teaching instrument. This reference contains an extensive, critical review of the studies in the area. It identifies five common problems of past cloze research in teaching. Future

directions for investigative work are suggested with particular reference to the difficulties encountered in earlier studies. Seven guidelines for the reporting of cloze research are noted. These suggestions should prove useful in the documentation of future cloze experimentation. This is an important reference for those interested in applying cloze methodology to the classroom setting.

RANKIN, EARL F. "Uses of the Cloze Procedure in the Reading Clinic," in J. Allen Figurel (Ed.), *Reading In A Changing Society*, Proceedings of the International Reading Association, 4. New York: Scholastic Magazines, 1959, 228-232.

Examines the use of cloze as a diagnostic procedure in the reading clinic. Several specific suggestions are made for its implementation as a remedial measure. The development of cloze exercises for individual remediation in subject matter areas seems to be an especially useful recommendation.

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